

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A distortion compensator comprising:

an ~~amplitude-amplitude-phase controller section~~ for controlling an amplitude and phase of an input transmission base-band signal to form a controlled signal;

an ~~quadrature modulating section~~ for orthogonally modulating the controlled signal received from an output of the amplitude-the amplitude-phase controller section;

a power amplifier for amplifying the quadrature modulated signal received from an output of the quadrature modulating section;

a directional coupler for distributing the amplified signal received from the power amplifier as a feedback signal~~an output of the power amplifier~~;

a frequency converter for frequency-converting the feedback signal received from one of outputs of the directional coupler;

a ~~Fourier transformer section~~ for Fourier-transforming ~~an output of the frequency-converted signal into a frequency spectrum signal~~~~converter~~;

an ~~out-band power computing section~~calculator for computing an out-band power outside of a transmission band from the frequency spectrum signal, the out-band power corresponding to a distortion component of the power amplifier~~an output of the Fourier transform section~~;

an amplitude ~~computing-section~~calculator for computing an amplitude value of the input transmission base-band signal;

a ~~fixed-coefficient storing-section~~storage for storing a ~~characteristics~~ reverse to a pre-measured input/output characteristic of the power amplifier, one of the stored characteristics selected based on the amplitude value;

an error coefficient ~~computing-section~~calculator for computing an error characteristic, the error characteristic computed based on the out-band power from the out-band power calculator and the selected from a stored characteristic in from the fixed coefficient storage~~storing-section, on the basis of an output of the out-band power measuring section~~; and

an ~~amplitude-amplitude-phase change-amount-computing-section~~change calculator for computing an amplitude change amount ~~of amplitude and a phase change based on the selected characteristic from the fixed-coefficient storage and the error characteristic from the error coefficient calculator~~on the basis of outputs of the fixed-coefficient storing-section and the error coefficient computing-section, and instructing the ~~amplitude-phase controller-section~~ to carry out the control ~~on the basis of~~based on the amplitude change amount of amplitude and the phase change.

2. (Currently Amended) A distortion compensator comprising:

a variable attenuator for controlling an amplitude of an input transmission RF signal to form an amplitude controlled signal;

a variable phase unit for controlling a phase ~~on an output of the amplitude controlled signal received from~~ the variable attenuator to form a controlled signal;

a power amplifier for amplifying ~~an output of the~~ controlled signal received from the variable phase unit;

a directional coupler for distributing the amplified signal received from an output of the power amplifier as a feedback signal;

a frequency converter for frequency-converting the feedback signal received from one of outputs of the directional coupler;

a Fourier transformer section ~~for~~ Fourier-transforming ~~an output of the~~ frequency converter converted signal into a frequency spectrum signal;

an out-band power calculator computing section ~~for~~ computing an out-band power outside of a transmission band from the frequency spectrum signal, the out-band power corresponding to a distortion component of the power amplifier from an output of the Fourier transform section;

an envelope ~~detecting~~ detector section ~~for~~ outputting an amplitude value of an envelope ~~on~~ of the input transmission RF signal;

[[a]]fixed coefficient storing storage section ~~for~~ storing [[a]]characteristics reverse to a pre-measured input/output characteristic of the power amplifier, one of the stored characteristics selected based on the amplitude value;

an error coefficient calculator computing section ~~for~~ computing an error characteristic ~~of from a stored~~, the error characteristic computed based on the out-band power from the out-band power calculator and the selected characteristic in from the fixed coefficient storing section, on the basis of an output of the out-band power measuring section; and

~~an amplitude-phase change amount computing section calculator for~~
~~computing an amplitude change amount of amplitude and a phase change based on~~
~~the selected characteristic from the fixed-coefficient storage and the error~~
~~characteristic from the error coefficient calculator on the basis of outputs of the fixed~~
~~coefficient storing section and the error coefficient computing section, and instructing~~
~~the variable attenuator and the variable phase unit to carry out the control based on~~
~~the basis of the respective amplitude change amount of amplitude and the phase~~
~~change.~~

3. (Currently Amended) A distortion compensator according to claim 1, wherein the error coefficient ~~calculator computing section is to compute~~ a polynomial having, as a variable, ~~an the~~ amplitude value of ~~[[a]]the input~~ transmission base-band signal ~~or transmission RF signal~~, to update a coefficient of the polynomial from the out-band power.

4. (Currently Amended) A distortion compensator according to claim 1, wherein the out-band power ~~calculator computing section has~~ includes a power computing section for computing an adjacent channel leak power ratio and a determining section for determining whether the adjacent channel leak power ratio is ~~less than or equal to or smaller than a~~ predetermined value ~~or not~~, to instruct the power amplifier to halt operation when the adjacent channel leak power ratio is greater than the predetermined value.

5. (New) A distortion compensator according to claim 2, wherein the error coefficient calculator computes a polynomial having, as a variable, the amplitude value of the input transmission RF signal, to update a coefficient of the polynomial from the out-band power.

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6. (New) A distortion compensator according to claim 2, wherein the out-band power calculator includes a power computing section for computing an adjacent channel leak power ratio and a determining section for determining whether the adjacent channel leak power ratio is less than or equal to a predetermined value, to instruct the power amplifier to halt operation when the adjacent channel leak power ratio is greater than the predetermined value.